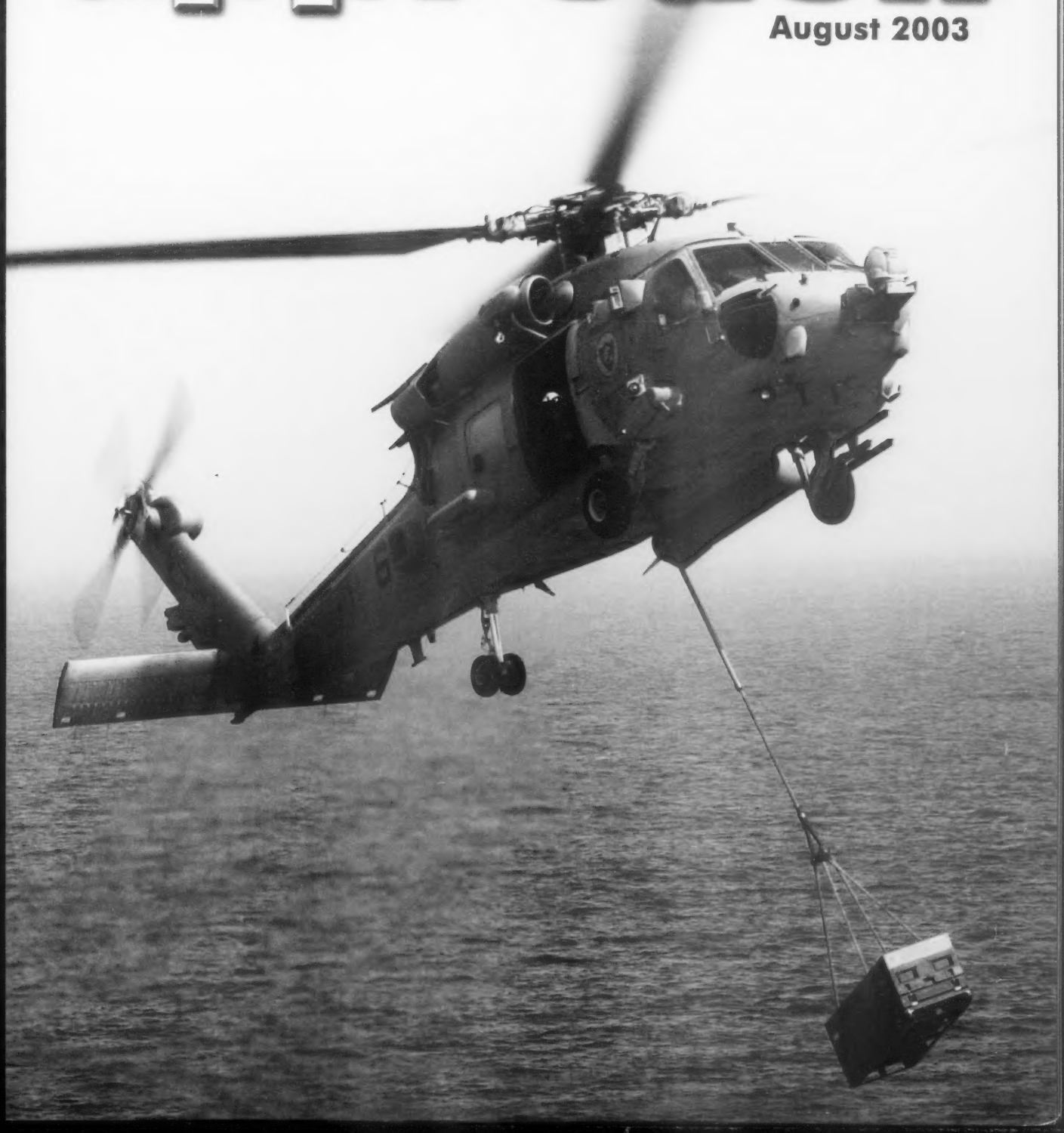
THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

August 2003



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The Naval Safety Center's Aviation Magazine

August 2003	**Volume 48 No. 8**
On the cover	An HH-60H from HS-6 conducting VertRep. Photo by AN Joshua Tyree
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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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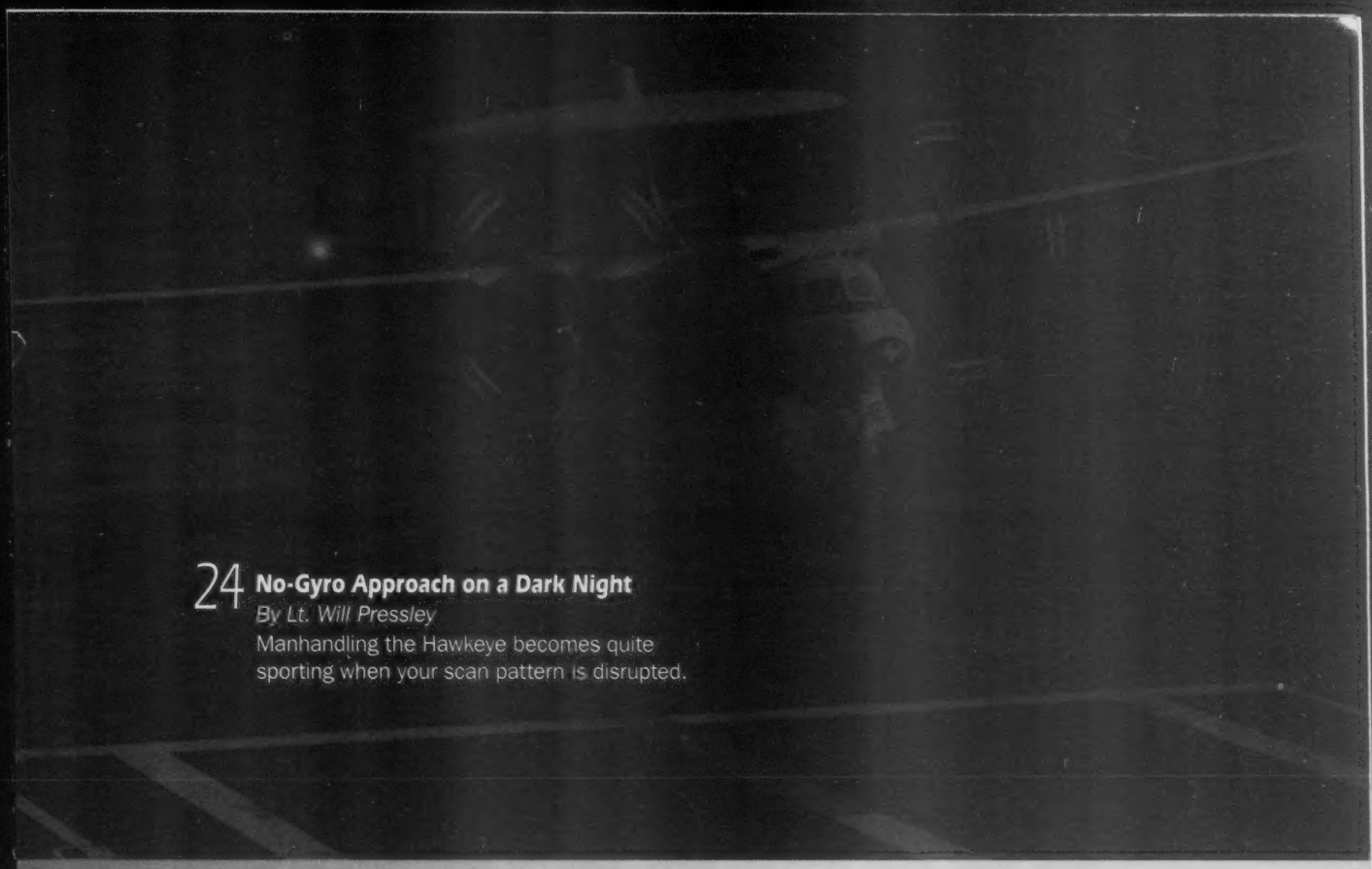
Features



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August Thanks

Thanks for helping with this issue…

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LCdr. Bruce Hay, VAQ-139
LCdr. Robert Quinn, VFA-83
LCdr. David Gleeson, HSL-49
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Lt. Eugene Cran, VT-31
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Two Landings

By 1stLt. C.M. Robertson, USMC

It was a bright, sunny, Southern California day, and I was the third copilot on a single-point, external-training flight in the Camp Pendleton Training Area. I looked forward to getting more stick time in the mighty Super Stallion. Our HAC's brief was thorough, and we waited for our hotseat time. I would ride in the belly with the second copilot until we arrived at the LZ, where the externals were to take place.

En route to our external site, we picked up the helicopter-support team (HST) at LZ-21. The LZ was a dirt football field and had numerous obstructions, including power lines and football goal posts. With the HAC at the controls, the HST pickup went without a hitch.

We then headed to our external site, the DZ San Mateo. The second go and I were kicked out of the aircraft to wait our turns. After a couple hours, it finally was my turn. My single-point externals went without a hitch.

As we left the external site, to return the HST to the LZ, the HAC said he was raising the gear. I made a mental note of the gear as they went three up and locked. We flew southeast to Pulgas Canyon and water. As we turned south, along the coast, the HAC asked, "Can you handle the landing into the LZ?"

Being a motivated first lieutenant, I, of course, said, "Yes, I've got it, sir."

Turning downwind for the zone, the HAC reminded me, "Hit my approach numbers." Upon hearing this order, and knowing he earlier had the controls for this LZ, I knew he would be on me like a hawk.

I was on the numbers as I turned onto final from the 90.

The HAC reminded me to scan for the obstacles at the approach end. I leveled off to make it a steep approach, while keeping clear of the power lines and the goal posts. As we passed the power lines, the HAC asked the aircrewmen if we were clear. After the "all clear" call came from the back, the HAC reminded me to watch for the goal posts. Again, as we passed them, the HAC asked the aircrew if we were clear. After receiving the final "all clear" call, I continued my descent to a high hover in the LZ.

Soon, the aircraft began to wobble. The HAC took the controls, came up into a 10-foot hover, looked at the gear indicators, yelled an expletive, lowered the gear, and set down the aircraft. The HST got out, not knowing why we had made two landings.

We inspected the aircraft. The only damage was a broken radio antenna and bent metal on the underside around the antenna. The damage was minimal because we had not bottomed the collective, but the aircraft was down two weeks for planner and estimator repairs around the antenna.

This incident was a direct result of our fixation. Unfortunately, for us, the dummy alarm, also known as the gear-up-warning system, didn't work. We were too fixated on my approach and the obstacles in the zone to accomplish a simple task: call for the landing checks, and verify we had three down and locked on final. No one got hurt because of our mistake.

I now call for the landing checks (when I'm the PAC) or do them (when I'm the PNAC) well

before landing. Our squadron SOP states, "PAC will request a landing checklist prior to passing through 300 feet AGL or as appropriate. PNAC will perform landing checks prior to passing through 200 feet AGL."

In regards to crew-resource management, try to recognize when you or other members of your crew are fixating, and notify everyone in the aircraft.

1stLt. Robertson flies with HMH-361.

This article articulates a CRM failure of the pilots in missing the landing checklist. I wonder what the crewchiefs were doing to miss this blatant gaffe. For an external flight, at least two aircrew probably were on ICS, clearing the aircraft into the LZ. Landing checks are completed over ICS so each crewman knows what's going on. Although the pilots take the prize for tunnel vision on this incident, the crewchief or aircrew should have caught this omission.—Cdr. Chris Spain, H-53 analyst, Aircraft Operations Division, Naval Safety Center

for the Price of One Antenna

Living on

By Lt. Joe Goodman

The flight was your standard man-up for a good-deal night trap. My Hornet was parked on the four row, waiting for a yellowshirt so I could taxi to the cat. It was a humid night, and the temperature must have hit the dew point because fog hit the canopy right after engine starts. The fog made it nearly impossible to see outside, much less see the taxi director. I turned on the canopy-rain removal, which cleared the front part of the canopy enough to taxi.

The yellowshirt broke me down and began to taxi me to the stern, toward the waist cats. I had no peripheral vision because of the fog on the canopy, so I slowly taxied. The deck was moving because of the rough seas; the jet would slow going uphill, then speed up as it rolled downhill.

Standard procedure was to taxi aft, over the 4-wire, take a hard right to taxi between the 3- and 4-wires, then turn right onto cat 4. I took the initial right turn after the 4-wire and had to add power because the deck's port side had risen in a swell. I could feel the jet accelerate, so I came off the power, but the jet kept moving faster than normal. I applied full brakes, but the jet still did not slow.

To compound my problem, the area behind cats 3 and 4 was slick from oil and hydraulic fluid that had soaked into the nonskid. The jet continued to accelerate so quickly, even with the brakes locked, the yellowshirt directing me in front of the jet jumped out of the way. I applied full right nosewheel steering to clear a parked Tomcat on my left, while I tried to keep the nosewheel away from the quickly approaching scupper.

Time seemed to slow down. I didn't know

the Edge

The nosegear slightly was behind the pilot's ejection seat. On my left side, I had missed hitting the Tomcat by six inches.

what speed was needed for the nosewheel to hop over the scupper and put me into the water. All our training had stressed that as soon as the nosegear goes over the scupper, you're out of the ejection envelope.

I planned to give the nosegear one thud of a chance to stop me, then I would go. I had my right hand on the ejection handle as I approached the edge. The one thud stopped the jet and left me stuck against the scupper, hanging over the water. The nosegear slightly was behind the pilot's ejection seat. On my left side, I had missed hitting the Tomcat by six inches.

The airboss came over the radio and said they had me and were chaining down the jet. Fortunately, the nosegear had cocked itself 90 degrees right and was flat against the scupper. We'll never know if the jet's momentum was enough to cross the scupper if the gear hadn't been cocked. My Hornet was hooked to a tractor and pulled back on deck.

My final checkers looked at the nosegear and decided I was "good to go." I went to the cat, got shot off, uneventfully completed the mission, and returned to mom.

The OOD said the ship had sailed into the trough of a large swell. The ship's port side had dropped five degrees at the moment I taxied between the 3- and 4-wires. The normal maximum list the ship wants is two degrees when taxiing jets.

The loss of peripheral vision because of the fog on the canopy took away most of my external cues as to how fast I was taxiing on the flight deck.

Don't let the get-the-sortie mindset drive you into a bad decision. I was closer to ejecting than I've ever been, and I was a bit shaken. I should have told my flight-deck coordinator I'd had enough and wanted him to shut me down.

Overall, the ship and the jet were in the wrong place at the wrong time, and I was along for the ride.

Lt. Goodman flies with VFA-83.

Just Anc
Standard

By Ltjg. Sonia Barrantes

Our mission was a standard, night-SEAD from our home base in Atsugi, Japan. I was the second-most junior ECMO in the squadron, and I was in the front seat with the most junior pilot. We had a more experienced Cat. I ECMO in the back, along with a former FRS instructor. Our weather brief and ATIS were calling the field broken at 1,500 feet.

At engine start, we got an advisory call from Badman, the air-wing-duty officer (AWODO), saying the radar at Yokota AFB had been hit by lightning, and services would be degraded. Yokota provides our departure, arrival, and PAR services, so we called back to ask if we still were cleared to launch in spite of Yokota's radar problem. The AWODO replied they were not canceling the launch.

The only gripe on our jet we were concerned about was a freely spinning compass card that had been signed off after switching out a box. Our mission commander previously had flown in this jet and was skeptical the problem was fixed; however, the compass card worked 4.0 during our taxi. As we approached the holdshort, a radio call told all aircraft that Yokota AFB, our primary divert, was calling zero-zero. Because Atsugi's weather held steady at 1,500 broken, and other military diverts were briefed as options, we decided to take off anyway.

After takeoff, we quickly climbed into solid IMC at 2,000 feet. As we went to clean up the wings, it immediately was obvious the slats were stuck partly out. We bunted the aircraft twice, and still the slats remained out. As I went to pull out the checklist, my pilot told me the compass card was spinning freely, ratcheting, and randomly reversing direction of spin. We coordinated with departure control to troubleshoot overhead the field, and we followed shortly with a request for no-gyro vectoring. Our TACAN needle was unusable, our GPS was down, and our only navigation information came from our INS steering page. We were IMC in mild to moderate turbulence, with lightning every 15 to 20 seconds. We

simultaneously tried to troubleshoot the situational indicator and heading-reference system as we went through the flaps/slats-fail-to-retract checklist. We were able to clean up the wings, but we had more to do before we were on deck.

We decided to return and land, but we had to decide with what configuration. My pilot was adamant he was going to stay in a known configuration and would not dirty-up the wings, so we were committed to a no-flap/no-slat approach.

We had called tower and asked them to rig the short-field gear on the active runway. But 20 minutes later, they called back and said they couldn't. Another factor in our runway decision was our situational indicator and heading-reference-system issues. We were unable to safely shoot a PAR without a heading source, and there was no ILS to the active runway. We decided to fly the no-flap/no-slat approach to an arrested landing on the off-duty runway—with a four-knot tailwind. After dumping fuel, we estimated we would have a two- or three-knot buffer before we exceeded the maximum tire speed of 175 knots.

After almost an hour of no-gyro vectoring in IMC, we finally commenced the ILS with an extended final leg. We had dumped as much fuel as possible to lower our approach speed; we had enough gas for one more pass, with no divert. Because of our increased approach speed, our nose-gear remained barberpoled until two miles from touchdown. We broke out at three-quarters mile to an arrested landing. Five minutes after landing, we were sitting on the runway, waiting to get out of the gear, when the field went to zero-zero.

Although our crew coordination was excellent throughout the flight, we agree the more prudent course of action would have been to dirty-up again and come back around to land, instead of trying to clean-up the wings. However, we also agree once we had cleaned-up, it was an acceptable decision to maintain a known configuration. Although we acted within regulations, we also boxed ourselves in by taking off with rapidly deteriorating weather in the vicinity of our destination and a questionable heading display.

Ltjg. Barrantes flies with VAQ-136.

Those Things Didn't Scare Me

By LCdr. Randy Green

I loved my tour in the training command as a T-34 instructor. It was challenging and extremely rewarding. We flew day in and day out, including an occasional Saturday to meet our pilot-training rate. While I didn't set any flight-time records, I still had to see the flight surgeon on more than one occasion for a flight-hour waiver. The benefit of so much seat time was the proficiency and confidence I gained as an instructor.

I learned to feel comfortable letting students make mistakes. In the process of allowing these mistakes, I occasionally found myself in an unusual attitude, with varying amounts of available airspeed and altitude. The first time a student erred, I was quick to grab the controls. The hundredth time—well, you know.

Let's pause here for a minute. Think about any war movie you've ever watched. There's always a scene that demonstrates the courage and battle-toughness of the hero. You know—the one where the platoon is withering under enemy fire, and everyone, except our hero, is crouching low in the trenches. He's standing in the open, barking orders to his men, unafraid of the hail of deadly bullets whizzing around him. Amazingly, every time, he's escapes being shot, winged, dinged, or otherwise perforated by the enemy fire. He's been in this situation a hundred times and likely will be a hundred more times. He has a job to do, and he's going to do it.

So, here I am in the landing pattern for the hundredth time this week. I'm teaching a fam student who's coming off the 180, approaching the 90. He's flying visual checkpoints and, much to my delight, adjusts his angle-of-bank to compensate for the strong crosswind that is keeping him from reaching his landmark. However, he's underpowered; I can see this problem plain as day, but he hasn't recognized it yet.

He raises the nose to maintain profile. As the airspeed begins to drop off, I offer some friendly assistance, "How about a little power?"

No response.

"Watch the nose. You need a little power," I prompt.

I can see his head shift inside, looking at the instruments. Another few seconds pass. We're getting slow, which is unfortunate, because his ground track is looking good.

"Power! Power!" I tell him with more emphasis.

Still nothing. About this time, the rudder shakers fire.

"I have the controls," I say, as I take the airplane, adding power and leveling the wings.

"Hmmm, lot's of free-play in the stick," I said to myself.

As I complete the second nature go-around procedures, I explain, "Your ground track to the 90 looked great, but you need to compensate for these winds by keeping a little more power from the 180 to maintain profile…"

I remember giving him back the controls and looking ahead to find our interval traffic in the crosswind turn. As I did, my mind unconsciously replayed the last minute or so of our flight. I realized I never have been so slow in the pattern. It dawned on me the free-play I felt in the flight controls was an aileron gasping for air to push against as I leveled the wings. Come to think of it, minus a few knots more, we would have stalled.

Here I was, the battle-hardened hero, focused on my task of trying to help my student with his error recognition, oblivious to the enemy bullets flying around me.

Confidence is a great and necessary thing, but a balance needs to be struck. As my instructor confidence increased, so did my comfort zone (the length I was willing to let a student take the airplane). However, the airplane has aerodynamic and performance limits that have no idea (and don't care) where my comfort limits are. The danger is subtle; if I let the student cross my comfort limits, will we find ourselves outside the aircraft limits, as well?

I still think about this incident. No one was hurt, we didn't bend any metal, and I was not afraid—which is what scares me.

LCdr. Green is currently assigned to VQ-4.

Crew-Resource Management

Situational Awareness

Assertiveness

Decision-Making

Communication

Leadership

Adaptability/Flexibility

Mission Analysis

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Get-Home-Itis Almost Got the XO

By Cdr. Timothy C. Pedersen

I hate to tell this story, in part, because after flying more than 18 years in two communities, I would have thought I had attended enough safety stand-downs, read enough *Approach* articles, and heard enough ready-room chatter on how not to succumb to get-home-itis. *Webster's* does not define it; however, it is a common term in naval aviation. The urge to hurry home has been the root cause of several mishaps that have claimed lives, damaged aircraft and hurt many an aviator's pride. I can add myself to the latter.

The story took place December 2002 at Ramstein AFB, Germany. We were providing communications support for the USCincEur-NATO battle staff with our E-6B Tacamo aircraft. Our flights had gone well, liberty was great, and we had taken advantage of the Christmas shopping. The last flight was complete, and the crew was finishing postflight duties. The airstairs were

being brought to the forward main door of our Boeing 707.

I was on the flight deck, finishing my chores, when a loud hissing grabbed my attention. At first, I thought someone was purging one of our portable oxygen bottles, but, after hearing shouts, I saw differently. The escape slide for our forward door had inflated inside the aircraft when a crew member tried to open the door from the inside.

The escape slide is over 18-feet long and is used for emergency egress. It does not fit well in a fuselage when inflated. Crews have used knives to cut them and stop their inflation, to avoid getting pinned against an interior bulkhead. Fortunately, our crew member was not hurt, just a little embarrassed. The triggering lanyard had dislodged and gotten caught between the side of the jet and the airstairs, causing the inadvertent inflation.

There I sat, the night before our scheduled return home. I could only imagine the squadron wardroom talking, "XO wants a few more days in Germany, so he pops a slide." Granted, liberty in Germany is great, but, after you have bought all the presents and visited all the castles, everyone wants to get back home.

I called our maintenance department, telling the controller of our plight. I had, in front of me, two points of reference for guidance. The first is our wing-configuration-control list. This reference indicates the total number of a specific component on board the aircraft and how many are required for flight. In our case, the E-6B contains three emergency-escape slides and all are required for flight. In addition, the NAVAIR E-6 Mission Essential Subsystem Matrix (MESM) states, "All emergency equipment must be operable." As noted, our jets have three emergency slides, one internally in the forward main door, one in the aft door, and a third next to the aft bailout door. The slide by the bailout door is different from the other two: It is not mounted into the door.

To justify my rationale to return with only two operable slides, I felt we could move the aft bailout-door slide up front and could use both our primary exits for ground evacuation: the forward and aft doors, with operable slides. Our maintenance controller was thinking the same way, and the approval request for a waiver was started up the chain.

Within the hour, our maintenance officer called and told me there would be no request for a waiver. His reasoning was sound, and it woke me up like a slap to the face. Since we had a full jet (23 personnel), he asked me what would happen if we had to abort on the runway and egress. What if one of the slides failed? Imagine the chaos in getting 23 people out of a burning jet, using the one remaining slide. Seconds count in emergencies, and I could have contributed to injuring some of my crew members because of my shortsightednes

The good news: A resourceful engineer talked to a NATO base in northern Europe that flew a similar airframe, and, after an eight-hour round trip on the Autobahn, he had procured a slide. Total delay, one day. Red-faced XO? You bet. Knowing you had a truly up jet, priceless.

Get-home-itis can happen to anyone. If documents tell you something, it is for a reason. I learned naval aviation, with all of its checks and balances and proper use of ORM, will stop irrational thinking like mine. When a decision doesn't seem right, ask the chain of command for inputs. Chances are, someone at homebase, who is not pushing to get home, has the big picture.

Cdr. Pedersen is the executive officer of VQ-3.

Don't Be an Airhead

photo modified

By Lt. Jennifer Stillings

Remember those aviation-indoctrination days? We gathered in the hypobaric-chamber building and received the boring physiology briefs, while we tried to stay caffeinated and alert. We heard about fatigue, the effects of alcohol, and the hook maneuver—yada, yada, yada. Then we lined up for the chamber, and each person was assigned a different task. The chamber pressure climbed to 25,000 feet. We laughed as classmates screwed up patty-cake and made clowns of themselves.

No one laughed, though, about an incident that happened on deployment. We had been gone almost four months, changing theaters between Afghanistan and the Arabian Gulf—never getting too mission complacent but plenty aviation complacent. We were pros; we had done it all. Right?

I was setting up my backseat, electronic-countermeasures system and troubleshooting last-minute items. My crew and I had our oxygen masks off, but we planned to put them back on

when we got off the tanker.

Suddenly, I didn't feel quite right. It's hard to explain how I felt, but I moved a little more slowly than usual and had trouble focusing. I then looked at the cabin-pressure gauge.

In the EA-6B, that's one of the few repeater gauges in the backseat. It's also more difficult for the pilot to read because the panel is in front of the stick base. The cabin pressure read 15,000 feet. The usual reading at our operating altitude was 9,000 to 10,000 feet. As I reached for my oxygen mask, everything dimmed to gray. After I got the first couple breaths of oxygen, everything again became clear. I alerted everyone in the cockpit of our situation, and they also got on oxygen.

With four sets of eyes in the cockpit, it's amazing no one spotted our slow pressure leak on the gauge before we felt it. We're lucky I'm an altitude lightweight, because most of the crew didn't notice a problem until they, too, went on oxygen.

However, this incident should serve as a reminder that a repeater gauge exists for a reason. Any member of the crew may recognize a problem. Mission degradation can be costly but not nearly as costly as losing a jet and crew.

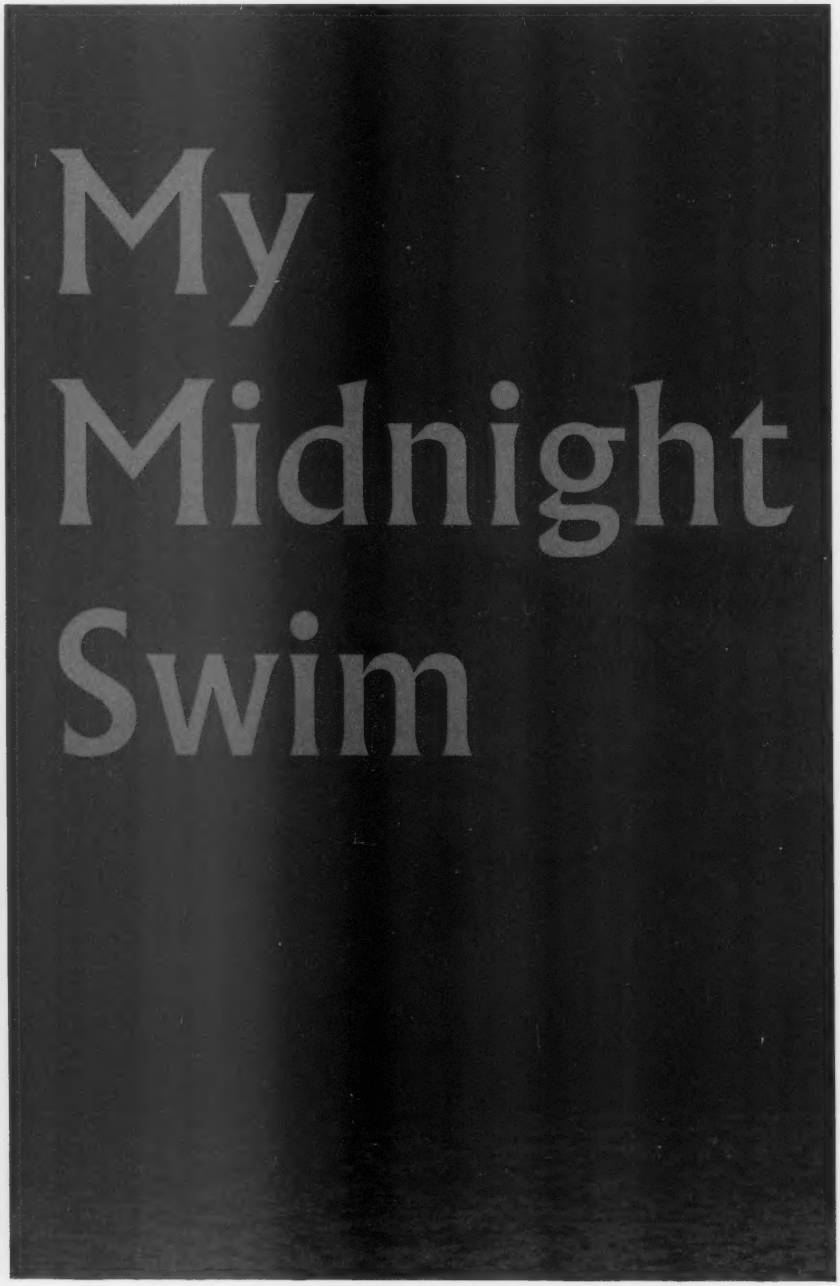
Lt. Stillings flies with VAQ-139.

OPNAV 3710.7S (Tactical and Tactical Jet Training Aircraft), paragraph 8.2.4.3, states, "Oxygen shall be used by all occupants from takeoff to landing. Emergency bailout bottles when provided, shall be connected prior to takeoff."—Ed.

Mishap-Free Milestones

VP-92	25 years	79,000 hours
HS-10	10 years	52,200 hours
HMH-362	20 years	60,000 hours
VMA-223	12 years	50,000 hours
HS-7	5 years	15,000 hours

Photo by PH3 Alex C. Witte
Photo modified



My Midnight Swim

By Ltjg. Katie Merhige

It was a dark, moonless night...no, really, it was!

My crew launched on what was supposed to be a double bag in support of JTFEX with a ship. I was flying left seat as an H2P. Our mission was to find and "kill" a sub that was tasked to attack the ship during a RAS.

With the first flight coming to a close, we donned our NVGs and planned to return and refuel. The ASTAC said landing on mother would be a problem because mom had started the RAS exercise early and currently was alongside. In addition, our other helo had been pulled out of the hangar for a pax-mail-cargo run to the beach. The domino effect of CRM breakdown began; it would eventually result in the loss of an aircraft and my unexpected swim in the ocean.

The typical SOCAL marine layer had moved in, creating a black night that made our goggles virtually useless. Even goggled, we only could make out a faint horizon. But, because of the goggles, we felt confident in diverting to a DDG to refuel.

Then the ASTAC told us the ready deck wasn't NVG-compatible (flight I). Our new plan was to degoggle, land, refuel, then regoggle for the second bag. We flipped up our goggles to readjust our eyes to the black night. We were flying on a moonless night, at 200 feet over the water.

When the HAC gave me the controls, I didn't climb. I stayed at 200 feet and flew inbound to the

I called out, "90 feet...80 feet," and realized something wasn't right. As I watched the radalt hit 60 feet, I called "Power! Power! Power!"

ship while the HAC degoggled and set up the cockpit for non-NVG night operations and our landing. We briefed landing on a DDG (flight I) (I had never landed on one) and the offset approach we would need to shoot but nothing in great detail. The HAC said he would fly the approach because he was in the right seat and could see the superstructure as we approached. The HAC had experience on this class of ship, so I trusted him.

I flew a couple of passes while the ship set up for our recovery. The HAC took the controls on one of the outbound legs as the ship passed us the final numbers. We had intended to fly another pass, but, when we were a mile astern, the ship gave us a green deck to land. Since we already were at 200 feet, the HAC entered the normal glidepath at the half-mile mark and 200 feet—one of our checkpoints. I don't remember discussing we would be intercepting the approach halfway through it. As we hit this checkpoint, I backed up the HAC with the mandatory instrument scan.

You may be wondering why I haven't mentioned the aircrewman. He was in the back preparing a fuel chit to expedite our time on deck. He knew we were on final, but we failed to include him in our silent plan to shoot a nonstandard approach. We hit our next checkpoint about 25 feet low. I told the HAC we were at one-third mile, 100 feet, and 30 knots indicated—we were long, low and a bit fast. I never told him to pull power or level off. I assumed when he heard me call the checkpoint, he would respond. I heard nothing from him, and we continued our descent.

I called out, "90 feet…80 feet," and realized something wasn't right. As I watched the radalt hit 60 feet, I called "Power! Power! Power!"

Everything was in slow motion. As I reached for the collective, I watched the radalt hit 20 feet. I was in denial about what was happening. I couldn't understand why we didn't level off or climb. I looked outside to see if the water was as close as my radalt indicated, or if something was wrong with my instruments, and the HAC still had everything under control.

As I looked up, we hit the water, and the helo immediately rolled to the right. We all successfully egressed and were recovered by the DDG.

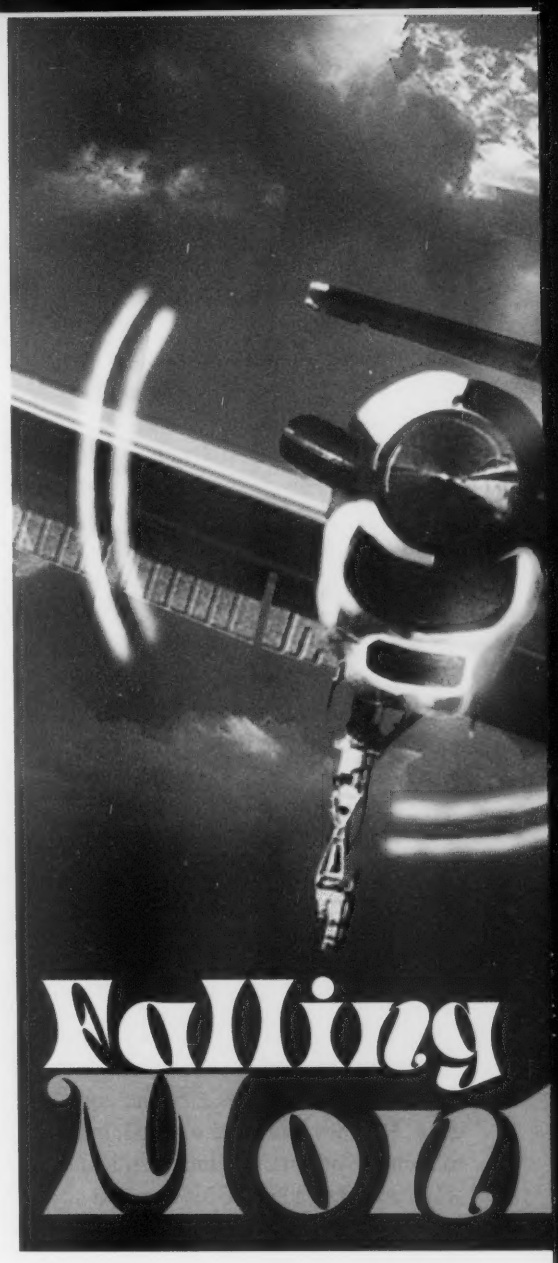
A multitude of things could have been done differently to prevent this mishap. Because we had flown together repeatedly as a crew, we were too confident and comfortable with one another; we believed everyone knew what was going on without having to say anything. I never heard a word from the aircrewman backing up the approach, mostly because the two pilots failed to make it clear exactly what approach we were doing. I never heard a word from the HAC the entire time on the approach, either acknowledging we were low or telling me what he saw. I failed to pull power when I noticed we were low.

What should have been done? We should have briefed the approach and everyone's responsibilities in more detail, especially since I never had seen an offset approach, and it was an IMC night. It turned out I was on a complete instrument scan while the HAC was on a visual scan outside. I later learned the HAC saw red (below glideslope) on the SGSI the whole approach. He thought he had it under control and never told the rest of the crew. The aircrewman should have backed us up on altitude and closure. We should have talked more about how dark it was. It would have been a good idea to climb to 400 feet and to fly out a few miles to set up for the normal approach. Or, we should have stayed at 200 feet and flown the NATOPS-alternate approach.

As an inexperienced H2P at shipboard operations, I put too much faith in my HAC and blindly trusted his decisions. There are two pilots and an aircrewman in a helicopter for a reason. My crew failed to use checks and balances to prevent our mishap. Never let complacency replace good communication in the cockpit—it could have disastrous results.

Ltjg. Merhige flies with HSL-49.

By Lt. Brian Anderson



Falling Mon

"Montana 430, we think something just fell off your plane," called tower.

Not exactly something you hear from the tower every day, but I wasn't concerned when I heard it. We had seen numerous close encounters with birds that day, a common occurrence at NALF Cabaniss. I figured our good fortune of missing them just had come to an end. I hadn't heard any telltale thump or felt anything unusual, but what else could it have been?

The next call from the tower caused quite a bit of concern. "Montana 430, we believe your right tire fell off your plane after that last touch-and-go."

We hadn't felt anything odd during any of our touch-and-goes, and the gear had retracted normally. I took the controls, extended the gear, and requested a low pass so the tower folks could get a closer look. In the cockpit, the gear indicated three down and locked. Unfortunately, tower's suspicions were correct: We had lost our wheel-and-tire assembly. We climbed into the delta pattern, and I coordinated with another aircraft in the pattern to form up on us and take a closer look. He confirmed the tower's assessment. I still had my strut, brake assembly, and wheel mount, but the tire and wheel were gone.

By this time, word of our situation had spread over base frequency to our duty office, and they were busy coordinating with Raytheon mechs and squadron-instructor pilots. Everyone deliberated on our best course of action.

Meanwhile, we left the delta pattern at Cabaniss and headed for NAS Corpus Christi. At first, some believed our safest course of action was to land gear up. Then, discussion focused on the merits of selecting gear down and landing on the strut-and-brake assembly. Fortunately, we had an hour of gas remaining, which gave our squadron and contract maintenance team time to debate.

Some of our senior flight instructors went to the hangar deck and had maintainers pull a tire-and-wheel assembly off a plane to see what configuration we actually were dealing with.

Though other planes, including the T-44, successfully have landed on struts without lower oleos and tire assemblies, the consensus from the hangar-deck group was the remaining brake assembly was too fragile and would not rotate anyway. Everyone then agreed gear up was the best choice.

The T-44 NATOPS calls for landing gear up when one or more landing gear cannot be extended, but it doesn't specifically cover the situation we faced. When retracted, the T-44 wheels protrude from the bottom of the nacelles. So, during a gear-up landing, the tires support the aircraft, and brakes are available. Because we only had our left wheel, we anticipated a swerve to the right. We made plans to land on the runway's left side.

We also reviewed our egress procedures and decided to exit via the emergency-escape hatch on the starboard side, vice the airstair door. After the egress-procedures brief, we made one more pass over the runway to make sure it was clear, then set up for an extended final and started in for the landing.

From the Ramp

NATOPS procedures for a gear-up landing call for the engines to be fuel-chopped immediately before touchdown. We had briefed once we were sure the runway was made, and, at 30 feet (set in the radalt), we would fuel-chop the engines.

At 30 feet and 1,000 feet down the runway, we fuel-chopped the engines, landed left of centerline, and used the left brake to maintain directional control. We skidded 1,700 feet down the runway, and slid 35 feet to the right. Once the plane stopped, we completed the emergency-shutdown-on-deck procedures, and exited without further incident.

A chain of events leads to any mishap. In our situation, external intervention helped break this chain a couple times and lessened the impact of our malfunction. First was the attention to detail that ACAA Nolan Rhodes demonstrated as control-tower safety observer when he saw the tire depart *[see his Bravo Zulu in the May 2003 issue of* Approach*—Ed.]*. We never would have known anything was wrong until we hit the deck the next time around, anticipating a normal touch-and-go.

Second was the initiative and leadership demonstrated by fellow aviators and contract maintainers, who examined the malfunction in the hangar before we had to test it ourselves. This incident emphasizes the importance of looking out for one another, and how CRM, in and out of the cockpit, can intervene in the chain of events to avoid catastrophe.

Lt. Anderson flies with VT-31.

The Ori

By Lt. Derek Nalewajko

A good deal, cross-country flight from Lemoore to Oceana was the original plan. What happened on that trip caused the scare of my life and was the closest I have come to death.

The weather en route to Oceana was forecast to be good, and I looked forward to getting back to Virginia Beach and meeting old friends. Another IP and I took two Cat. I WSOs for their first flight in a Super Hornet. Neither student had flown in seven months, so I expected this trip to be a good warm-up for them.

The launch and climb-out were uneventful, and we leveled off at FL370. Since we flew wing for the first leg, I started to walk the student through all the displays and menus. After two minutes at altitude, we heard an aural-caution tone, the familiar deedle-deedle, but with no associated caution on the DDI. After we checked all our instruments, we figured this tone probably was an anomaly. We now were triggered to look at the DDI to see if a caution was displayed and quickly removed. Two minutes later, we heard two more caution tones, with nothing on the DDI. It now looked like my good deal was becoming another weekend in Lemoore.

A minute later, we got our last aural tone, with an OBOGS DEGD caution on the DDI. This caution was displayed for only four or five seconds before it disappeared for good. Being a Tomcat transition guy, when our LOX bottle was empty, we would get the familiar lack of flow, telling us the bottle was empty. Unlike the LOX system, with OBOGS, you still can get "good" flow, regardless of the quality or oxygen content. The caution should have sent us into a heightened sense of urgency. I thought there was a faulty indicator. We told our lead about the problem and that we had had three deedle-deedles before the OBOGS DEGD.

This is where the situation got interesting. Our lead asked us to descend immediately and to pull the emergency O2 green ring. Our boldface for an OBOGS DEGD is:

1. Emergency oxygen green ring–PULL.
2. Descend rapidly below 25,000 feet
3. OXY FLOW knob(s)–OFF.

Not realizing I already was hypoxic, I asked him to coordinate the break-up. I was unaware of the hard time I had conveying my intentions to lead. Still not seeing an OBOGS DEGD caution, I was more concerned I would not be drinking at the club in Oceana that night.

As my lead started to talk to LA Center for the break-up, I realized I was extremely hypoxic. I checked my finger nails for the traditional blue under the nail; I knew I was in trouble when I could not focus enough to see them. I immediately started a rapid descent to about 50 degrees

Hypoxic Hypoxia Symptoms

- Dizziness
- Euphoria
- Cyanosis (fingernails, lips)
- Poor judgment
- Numbness
- Tingling
- Loss of coordination
- Blurred vision
- Delayed reaction time

Effective Performance Times at Altitude

Altitude	Effective Performance Time
18,000	20 to 30 minutes
25,000	3 to 5 minutes
30,000	1 to 2 minutes
35,000	30 seconds to 1 minute
40,000	15 to 20 seconds
43,000	9 to 12 seconds

Class A Mishaps Related to Hypoxic Hypoxia

1989–F-14–Aircrew removed masks and helmets unaware of pressure leak inside of aircraft, became hypoxic and lapsed into unconsciousness. Aircraft departed controlled flight and hit ground.

2001–FA-18–Pilot became hypoxic, lost consciousness and crashed aircraft.

Hypoxic Hypoxia Treatment

- Breathe 100% oxygen
- Descend aircraft below 10,000 feet

ginal Plan

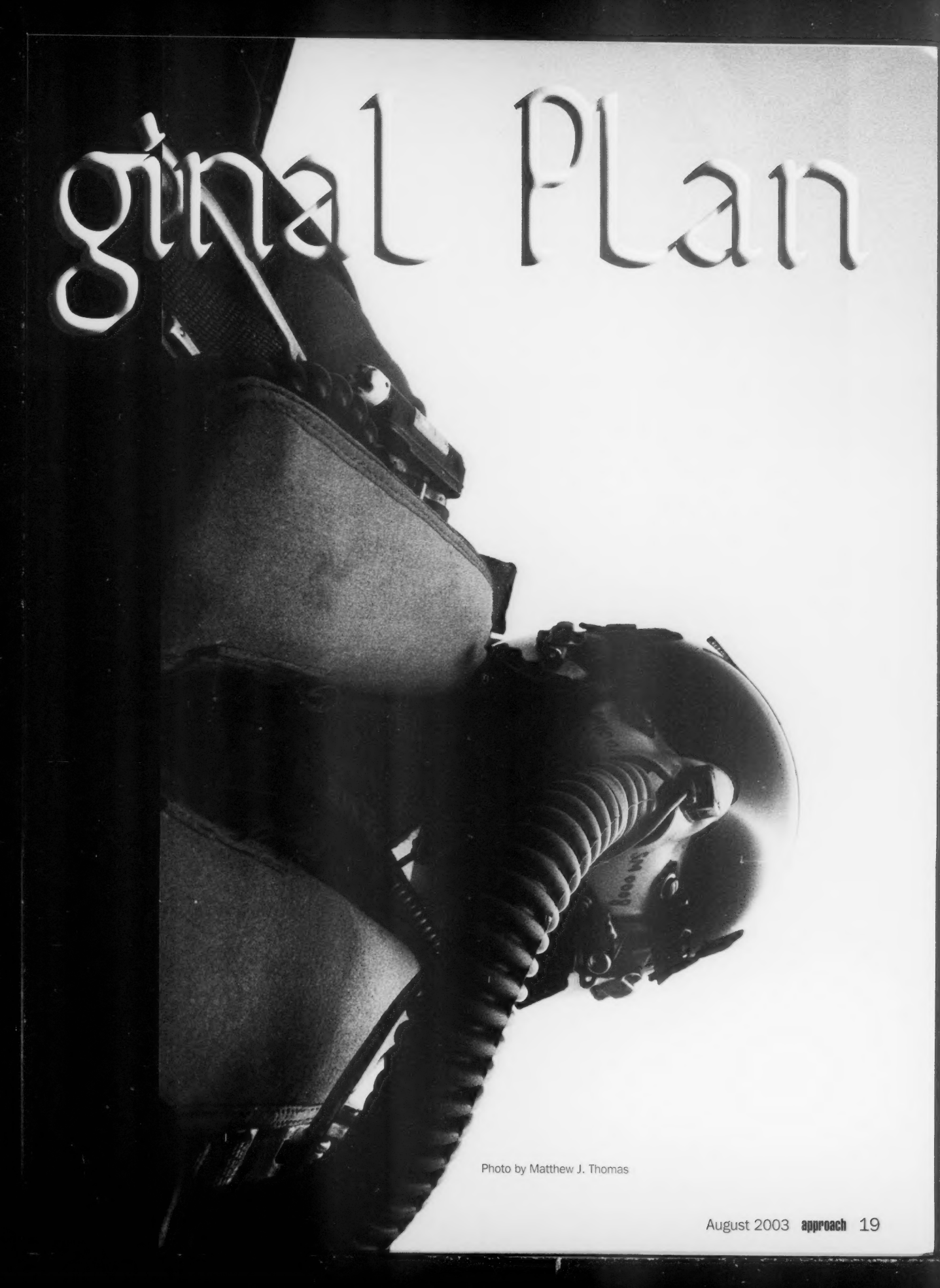


Photo by Matthew J. Thomas

nose-down, as I scrambled to pull my emergency O2 green ring. I was so impaired from the lack of oxygen, it took me about 30 seconds to find the green ring. I remember pulling the ring, but I could not tell whether it was on or not; I could not focus enough to read the indicator.

Passing through FL340 in the HUD, I felt like it took more than two minutes to descend from FL370. I remember an overwhelming feeling of panic because, now, my hands were shaking, and my vision was going in and out—like the TV snow effect. I was on the verge of passing out, and it felt as if I could not get down fast enough. Fortunately, there was a solid layer from 20,000 to 6,000 feet over all of R-2508. Somewhere below that cloud layer is mountainous terrain. As we started our moving-map penetration into the goo, my emergency O2 ran dry, and I had to turn back on the flow knob. After recreating the events, we estimated the seat-pan O2 lasted for two or three minutes, a far cry from the advertised 10 minutes. My seat-pan O2 was empty, and my hands still shook, but my vision was coming back.

During this entire time, ATC and my lead tried to contact us on the radio. I never heard a call for a full three minutes. We broke out of the goo at 2,000 feet AGL in Panamint Valley. I finally heard ATC call when we were level at 2000 feet. We quickly landed at China Lake.

Postflight maintenance found that the front cockpit "B nut" was loose and was not providing adequate O2 flow at altitude.

There are many lessons learned from this event. First, regardless of how long your OBOGS DEGD caution is displayed, you have to assume you are not receiving good O2. Second, the every-four-year, physiology chamber ride saves lives. I have no doubt without this training, I would not have realized my severe state of hypoxia.

The third and probably the most eye-opening lesson is how quickly hypoxia can happen without realizing it. My student got the FAM-1 from hell, while I got a new appreciation for the dangers of hypoxia.

Lt. Nalewajko flies with VFA-122.

BRAVO Zulu

AW2 Matthew Jirrels

During a crew swap to Proud Warrior 431, AW2 Matthew Jirrels discovered the pressure-differential indicator (PDI) for the main-gearbox filter was activated. A check of the indicator is not required by NATOPS during a hotseat event. Left undetected, a pressure differential can lead to a loss of main-gearbox-oil pressure. Petty Officer Jirrels spotted a condition that could have led to damage to the aircraft or loss of aircraft and crew.

How'd You Simulate That?

By LCdr. Jim Ridgway and LCdr. Scott Bailey

Annual pilot-NATOPS checks in the mighty Orion are a constant barrage of simulated malfunctions, mixed liberally with NATOPS-knowledge questions. Throughout, we are expected to proficiently operate the aircraft, while "driving" the scenario with the rest of the flight to make sure our CRM skills are up to snuff.

We were close to home field, doing the high work for my annual check and also a fly 5 for the training-flight engineer (TFE). The flight was going smoothly as we shut down the No. 1 engine after a simulated fire. We were discussing the shutdown with the TFE when the instructor-flight engineer (IFE), who was standing behind the TFE, called out "prop-pump light No. 4."

Between the time he said that and the time I looked over at the No. 4 engine indications—approximately two seconds—prop-pump lights No. 1 and No. 2 illuminated, and the propeller was overspeeding at 105.5 percent. The overspeed slowly increased to 106 percent and stabilized. This situation meant the variable-pitch blades had pitchlocked at the value they were in when the controlling hydraulic fluid departed the propeller system.

Propeller malfunctions are the bane of the P-3 community. Every ditch in the history of the P-3 resulted from a propeller malfunction. Propeller procedures have changed over the years to reflect lessons learned from these incidents. NATOPS procedures deal extensively with all aspects of propeller malfunctions, but, for all that emphasis, this type of malfunction still is rare. When a propeller malfunctions, it gets everyone's attention. None of our crew—with over 20 years of combined P-3 flight experience—had seen a pitchlock before this flight.

The IFE quickly got the training-flight engineer out of the seat. At the same time, the IP (in the right seat) turned off the No. 4 generator switch, in case the propeller overspeed exceeded the generator's limits of 109 percent. The IFE hurried through the prop-overspeed procedures from memory.

One thing we don't need in the P-3 is fast hands in the cockpit. Because the situation appeared to be stable, I told the IFE to slow down and that we would go through the NATOPS steps. The engine and prop had stabilized, and the pitchlock mechanism was doing its job. While it's important to be thoroughly familiar with the emergency procedure, it is not necessary to hurry through the procedure when the engine is stable, with no indications of impending structural failure.

After completing a normal restart on the No. 1 engine and reviewing the procedures, we checked with the aft observer and confirmed what we already had suspected. Something in the hydraulic system that controlled the propeller, had given way, causing the loss of all controlling hydraulic fluid to the No. 4 propeller. We completed the operation-with-a-pitchlocked-propeller procedure and talked about our next course of action.

We were close to home plate and at 6,000 feet. Between home and us was a solid cloud deck from 4,000 to 1,700 feet. Since this was Brunswick in January, we were certain to encounter icing on descent through the clouds. We decided to complete the checklists and to brief the engine-out considerations while VFR above the clouds—to avoid lengthy discussions during the busy descent to approach. One of the last steps in the operation with a pitchlocked-propeller procedure is to fuel-chop the engine. Because we did not want to deal with control problems at a low altitude, and we were close to home plate, we decided to fuel-chop above the

Photo by Matthew Thomas

cloud deck, then make our approach and land. We had been working within our VFR-altitude block and had not told approach of our troubles; we still had our hands full with taking care of the emergency. We decided to stabilize the aircraft after fuel-chop and then to declare the emergency with approach.

Three things can happen following fuel chop:

1. The propeller can go to a stabilized negative-torque sensing (NTS) condition. This condition would provide some controlling fluid in the prop dome, and we then could pull the emergency-shutdown handle and feather the prop. This is the best-possible scenario and commonly is referred to as "the good."

2. The propeller can decouple from the engine, causing the propeller to spin somewhat freely in the airstream. This condition causes only minor control problems on approach and landing; it's commonly referred to as "the bad."

3. The propeller can windmill but remain coupled with the power section. A great deal of drag occurs as the airflow spins the giant fan and turns the motor. This condition creates the greatest control problems for the pilots but

gradually gets easier as the airplane slows on approach and landing. This worst-case scenario commonly is referred to as "the ugly."

I slowed the aircraft to increase shaft horsepower before the fuel-chop—mindful to keep our rpm above 95 percent to prevent flameout. At approximately 150 knots, with approach flaps and indicating just over 2,000 shp (up from 1,000 shp after the pitchlock), we had the FE fuel-chop No. 4.

As soon as the FE fuel-chopped the engine, we could see the rpm drop. It stabilized at 60 percent, with shaft horsepower negative 700. An initial yaw of the aircraft occurred at fuel-chop, but the plane was very controllable, and, after a moment, the yaw seemed to decrease slightly. The shaft-horsepower needle for the No. 4 engine began to wander, and we wondered if the propeller had decoupled. Because none of us ever had seen a real decouple, it was a good question. We had followed our NATOPS procedures, and the result was a pitchlocked propeller, decoupled—not the best situation but certainly not the worst. We completed the emergency-shutdown checklist, made our call to approach (declaring the emergency), and set-up for the approach through the cloud layer to home field.

We had prepared for the call to approach; the message was straightforward, and no time was wasted explaining things to the controllers. We told them what we needed and gave them all the information they needed. The crew had time to concentrate on the approach as we descended through the clouds.

We initially asked for and received clearance for a PAR to runway 1R at NAS Brunswick. But, as we descended through 2,000 feet, we were clear of the clouds, and we changed our request to a visual approach. A visual would give us better control of the situation, without worrying about the extra radio calls involved with the PAR. The aircraft was handling well, and a slow-flight check in the approach configuration showed no difficulties.

The approach to landing was unusual because what would be considered normal power corrections for speed and rate of descent were insufficient because of the increased drag—courtesy of our windmilling prop. A power reduction normally would produce an airspeed correction of 5 knots but wound up producing a 15-knot change. The entire approach, therefore, required significantly more power over what is considered normal. Touchdown and landing were not much different from any other three-engine landing. As we slowed on the runway, the No. 4 prop rpm decreased, and, when we left the runway to taxi to the line, the prop stopped turning. It was dripping more prop fluid than we ever wanted to see on a nacelle.

The entire experience lasted 30 minutes. What had been a vague and almost frightening section of NATOPS became something we found easy to handle with good CRM and NATOPS knowledge. I suppose the worst part (or the best part, depending on how you look at it) of propeller malfunctions is they do not occur often, and our experience at handling them often is very low. Even with this lack of real-life experience, our procedures worked perfectly. We knew what to expect, and we learned we always had been ready to handle something of this nature.

Prop malfunctions have caused some of the worst mishaps in the P-3 community. Our NATOPS covers every conceivable contingency, and, because of the experiences of those who have gone before, we were ready to handle our emergency.

LCdrs. Ridgway and Bailey fly with VP-92.

No-Gyro Approach on a Dark Night

By Lt. Will Pressley

Some dark nights never are forgotten—no horizon, no moon, and the low-altitude haze kept us from seeing any stars. If ever there was an IMC night at the boat, this was the one.

I was a newly minted carrier-aircraft plane commander (CAPC) and had signed for the aircraft only a handful of times. I felt comfortable as CAPC on this mission because I was flying with a very competent and experienced second pilot (2P). Our Hawkeye squadron was four months into a seven-month deployment.

We manned-up and went through the normal preflight checks. The heading-and-attitude-reference system (HARS), our secondary navigation source, didn't work. We still had our primary navigation, carrier-aircraft-inertial-navigation system (CAINS), and a standby gyro. With the minimum required equipment, and being pressed for time, we pushed to make the launch. We managed to get off the pointy end, but, during climbout, a hydraulic low-level light came on. Honoring the light, we returned to the boat.

We quickly got our hydraulics serviced, but mass confusion soon followed. The plane captain signaled to ask us if we wanted fuel, but we misinterpreted his signal. Thinking we were being asked if we were getting fuel, we signaled no to the PC. We sat in the cockpit, thinking the grapes simply were struggling with the fueling panel. Precious minutes passed until we called in a flight-deck coordinator to clear up the situation.

Several minutes later, with a full bag, I signaled to cease fueling. It took at least seven or eight minutes to disconnect the hose and to get the fueling panel on the starboard nacelle closed—the grapes were struggling. The aircraft-control officer stood on his seat, his head protruding from the ditching hatch, and directed

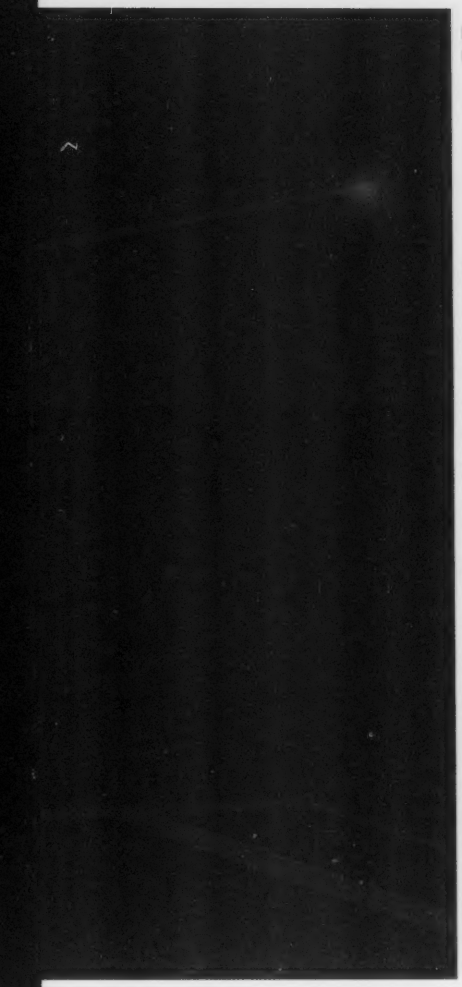


Photo by PH3 Yesenia Rosas
Photo modified

the purple shirts. When we got everything buttoned up again, it was time for the next launch. The situation was snowballing, and we were losing our cool.

Amidst all the confusion, I neglected to call in a troubleshooter to swap out the HARS for our hangar queen's HARS; we certainly had the time.

As we launched off the bow and climbed, our CAINS completely failed. All we had left was a poorly lit, standby peanut gyro and a wet compass. As we focused on the climb-out and keeping wings level, I declared an emergency and requested a no-gyro approach from CATCC.

If you've never shot a standby-gyro approach in a Hawkeye before, it can be an eye-opener. My advice to fellow E-2 pilots is to practice in the simulator—now. Since the gyro is poorly lit, my copilot shined his Grimes light on the instrument so I could see it—detracting from his ability to back me up. Also, the gyro has a nasty habit of precessing, and can read incorrectly if not checked and caged frequently. Fortunately, even though we had not checked the gyro after our first trap, it was relatively accurate. Accurate or not, though, it was small as hell.

Already a difficult aircraft to fly and land, manhandling the Hawkeye becomes quite sporting when your scan pattern is disrupted. I concentrated on keeping the aircraft straight and level and complying with CATCC's no-gyro instructions; flying required all of my focus.

I blundered through the pattern but thought I was doing OK. Meanwhile, the controller gave instructions to turn at half-standard rate. Those words went in one ear and out the other, as I banked a full-standard rate with each turn. As the controller wondered why this crazy E-2 pilot was overshooting the headings so rapidly, I considered an inflight alignment of the CAINS. As quickly as that thought entered my mind, though, I dismissed it. I remembered it took about 30 to 45 minutes to get a full airborne realignment.

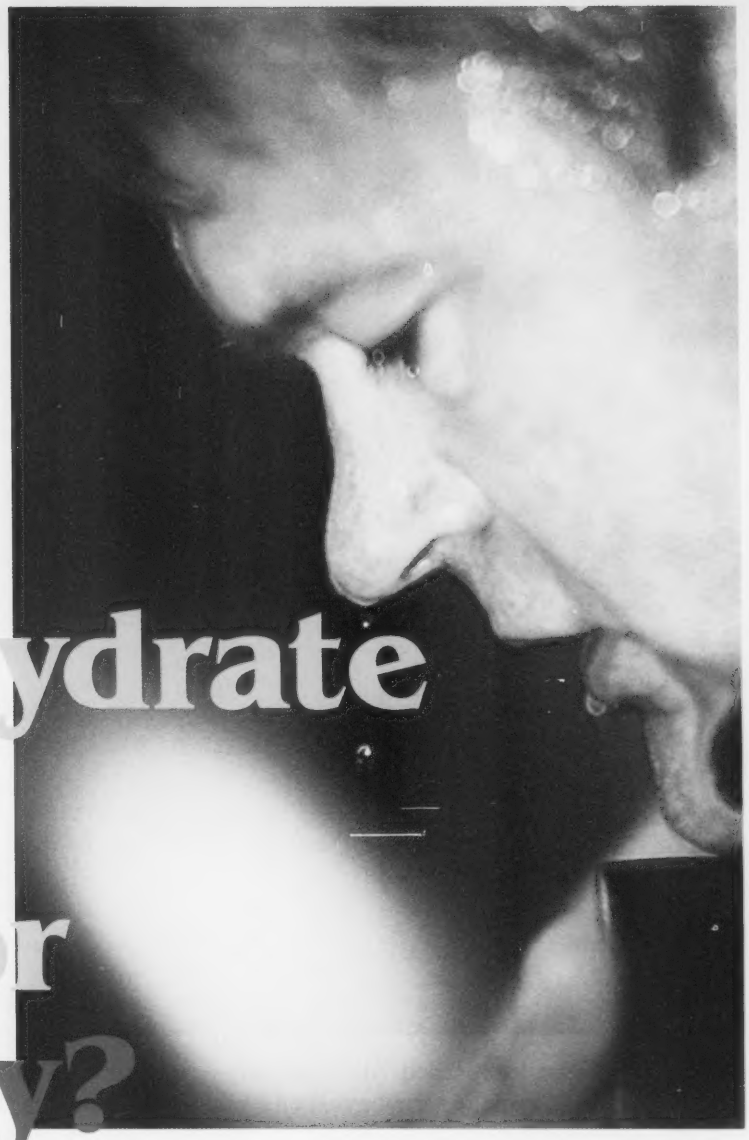
Weaving my way to final, still relying on a standby gyro and wet compass, I eventually approximated my final bearing. Sweating, trying not to think about how dark it was, and fixating on the gyro, I finally dumped fuel at three miles. After adding that task to my already overloaded brain, I completely forgot to start my descent. I tried to get CATCC to give me more sugar calls, but, after they started to give me numeric headings, I abandoned that idea and got a "paddles contact" call at two miles.

Because I forgot to descend, I was high and had to put in twice the normal rate of descent to find the ball. Thanks to laser lineup and paddles, I found centerline and was talked down to glideslope. I got the ball on the lens inside a half-mile and worked it down to catch a wire.

Analyzing the emergency in the safety of the ready room, I realized it really had started on deck. Even though the HARS had failed, I could have used the time on the flight deck—over 30 minutes—to call in a troubleshooter and have the faulty component replaced. I could have double-checked the standby gyro; I hadn't even looked at it.

I let the troubles on the flight deck distract me, and I didn't keep the big picture. Flight decks and aircraft have slow days, just like aviators. I let theirs become mine.

Lt. Pressley flies with VAW-112.



Low Carbohydrate Diets: Asset or Liability?

By LCdr. Simon Bartlett, Ph.D.

"You don't know what you are talking about," said the young lieutenant, sitting through my stress and human-performance class. He was referring to my counter-argument about the efficacy of low-carbohydrate diets. Later, I found out he was on one, and, in my opinion, he G-LOC'd multiple times in the centrifuge because of it.

Low-carbohydrate diets recently have become popular; they promise a magnitude of benefits, from weight loss to increased athletic performance. Because I'm the department head of the Aviation Survival Center, NAS Lemoore and I have a strong background in sport nutrition and exercise physiology, TacAir pilots frequently ask me for performance-enhancement information. I also am privy to many of their personal goals, concerns and experiences in the ever popular arena of nutrition and exercise. Pilots, being who they are, constantly look for the edge and sometimes will resort to various means to get that edge.

A year ago, my phone rang, and I recognized the voice of a commander who recently had completed centrifuge training. He asked if I remembered him from CFET training. I recalled when he attended and that he had done well with the profiles, some at 7.5 Gs.

The commander's concerned voice told me something wasn't right in Hornetsville, and he was about to let me in on something important. He went on to tell me he was having significant

problems with grayout and blackout at relatively low Gs. These problems had gone on for about six weeks, and he didn't know why.

Using my sleuth skills, I launched into some questions. How's your flight time?

He said, "I'm getting above normal amounts."

I asked about hydration. He replied, "I'm drinking plenty of fluids."

I asked about his exercise and sleeping habits. "Everything is normal," he said.

I was stumped; then, it struck me—illness. Had he been ill during this period of time? But he said no.

I had exhausted all possibilities and recommended he come to the centrifuge so we could evaluate his technique and possibly identify the problem. As I was about to hang up the phone, the commander made a very important revelation, "I don't know how significant this is, but I have been on the Atkin's diet for the last six weeks."

Bingo! I had found the cause.

The Atkin's diet is designed as a rapid weight-loss diet; it is not and should not be used as a performance-enhancement diet. The commander had lost 15 pounds over six weeks. In fact, he still was on it at the time of the call.

The mechanism in these low-carbohydrate, high-protein-and-fat diets isn't rocket science. Very low carbohydrate intakes over an extended period of time result in the body going into a mild state of ketosis. In this state, the body breaks down stored fats incompletely into ketone bodies, which then are released into the circulation. Increased circulating ketones have a profound appetite-suppressing effect and, coupled with high consumption of protein (which make you feel more full than other types of nutrients), result in a substantially reduced caloric intake and hence, weight loss.

Research has shown that the type of weight lost is a combination of water, lean body mass, glycogen, and fat. A tactical aviator should not lose anything other than fat. The loss of muscle, water and glycogen runs contrary to what is needed in the high-G environment.

A pilot engaged in a resistance (strength) training program and who pulls high sustained Gs on a regular basis, needs the right type and amount of fuel. That fuel drives the energy mechanism for sustaining the maximum muscle contractions needed under G. The optimum fuel to accomplish this physical challenge is carbohydrates. G-pulling exclusively uses glucose and glycogen to fuel the muscles in the isometric contractions that prevent blood from pooling in the lower extremities.

It is not difficult to understand how a low-carbohydrate diet would be inappropriate for a pilot in this environment. This diet could become a liability, rather than an asset. I have witnessed pilots who have G-LOC'd in the centrifuge under moderate Gs; they admitted to being on one of these diets.

I believe these diets need to be evaluated carefully and with some skepticism before a pilot straps into his aircraft. Let's practice ORM and mitigate all potential risks.

Scientific literature backs my position on this diet. Research indicates the majority of low-carbohydrate diets are potentially ergolytic (performance decreasing) to endurance and high-intensity exercise. Therefore, a low-carbohydrate diet, coupled with intense training protocols (strength training and G-pulling), results in significant suppression of muscle glycogen. You get a corresponding decrease in isometric strength, time to fatigue, and exercise-induced muscle weakness. Remember, carbohydrates—not the proteins and fats—are needed to replenish the muscle glycogen.

Perhaps a new NATOPS 3710 rule should be, "Warning: low-carbohydrate diets could be dangerous to tactical aviators performing high-G maneuvers."

Diet education is the key. Let's keep pilots abreast of the latest research, provide them resources, and help them debunk much of the unregulated, misleading information. Empower them to make informed decisions based upon science and not hearsay. The goal is to keep them fit and healthy to fly—give them the edge.

Oh, by the way, the commander took my recommendation and got off the low-carbohydrate diet. He introduced significant amounts of carbohydrates back into his regular meals and the problem went away.

LCdr. Bartlett is a department head at the Aviation Survival Training Center, NAS Lemoore.

Dude, Wake Up!

By LCdr. Ed Burns

We were scheduled for a double-cycle flight in the mighty Hawkeye on another routine day at sea. We briefed as red-air control for an air-defense, war-at-sea exercise on our first cycle and blue-air control of a 4 v 2 on our second cycle. The P-CICO (mission commander under instruction) sat in center seat, with two senior-instructor CICOs flanking him. The WASEX for the red air was successful because they attacked the CVN before being engaged by blue CAP. Hurray for the red guys!

Second-cycle strikers flew front-end tanking, which gave us extra dead time between events. We used the time to debrief items from the WASEX; all five of us were involved in the discussion.

Red and blue air checked in for our second event on the prebriefed have-quick control net, and red air passed a target area PIREP. I was busy working the data link, and the other I-CICO controlled the self-escort strike (SES).

Blue air was having a hard time hearing red air on the safety-of-flight, have-quick net. With COMEX in one minute, the blue lead sent a new TOD to resynch everyone and gave a long five count before sending it. I had expected the P-CICO (who owns all the mission radios during a flight) to toggle the TOD-receive switch. At the two count, the P-CICO hadn't moved. I was listening to the same radios as the P-CICO and knew he wasn't talking to anyone. I was concerned the P-CICO would not hit the TOD-receive switch in time, so I reached over and toggled receive. I was agitated to why the P-CICO didn't position the switch; then I looked at him, and saw his eyes were closed.

I grabbed his helmet and shook him awake. His eyes popped open, his body flinched, and his right hand moved upward to hit the TOD-receive switch—which I blocked. I told him we already had a good TOD, and the SES had started. For the next 30 seconds, he incoherently talked about the PIREP that red air had passed. Both I-CICOs told him not to worry about the PIREP; we pressed on, controlling the strike.

We weren't ready for this one aspect of risk. Because it was our only flight of the day, no out-of-the-ordinary tasking for the P-CICO's ground job should have affected him. The likelihood of someone falling asleep, or its impact, never crossed our minds. We learned several factors during the debrief that contributed to his falling asleep: He did not drink water during a 3.5-hour, double-cycle flight, and he never admitted at the brief he was tired.

Our air-wing flight surgeon recommends the following strategies to keep you alert during long or frequent flights when there is little time to rest:

- Drink water—dehydration decreases your ability to think.
- Breathe 100-percent oxygen (applies to aircraft that lack ejection seats).
- Get up and walk around to get the blood flowing (only works for big airplanes).
- Eat something; your blood sugar may be low.
- Take a combat nap, but let the crew know you need a five-minute break.

- Avoid workouts just before flying.

A combination of dehydration and exhaustion cuts your cognitive abilities in half.

From a Hawkeye view:

- Take breaks between cycles, when the tasking is light, but communicate your intentions to the crew.
- Temporarily assign individual mission duties to other crew members while away from your crew position or combat napping.
- If you're too tired to fly, cry uncle. A well-rested replacement JO almost always can be found.
- If you nod off during the most stressful part of a mission, you have become a detriment to the mission. It's too late for an alert crew member to assume an increased workload when someone unexpectedly nods off.

LCdr. Burns flies with VAW-126.

This is a good CRM example of what not to do. All seven elements of the familiar SADCLAM skills were not executed. Fortunately, this incident was published here and not on the message board as a mishap. –Cdr. Darryl Barrickman, E-2C analyst, Naval Safety Center.

When to

By LCdr. Greg Byers

When would you call it quits? On a recent cross-country, I asked myself just that question. It was a good-deal hop down to sunny San Diego for the weekend. We were to leave on Thursday, but a routine inspection on our Prowler revealed the right engine had to be replaced. The maintainers worked overtime and swapped engines in time for a crew to fly a morning check flight. Other than a slightly lower than normal idle speed, but still within limits, the jet was 4.0.

We manned-up and went to start the right engine. The engine lit off with no problems, but, as it reached starter-cutout rpm, it flamed out. A cursory look found nothing wrong, and we tried again with the same result. The ADs again could find nothing wrong and wanted to watch the third start attempt, hoping to spot the problem.

Knowing after the third start attempt I would have the 30-minute penalty-waiting period, I advanced the throttle about a quarter inch to see if that would get it over the hump. I don't know if nudging the throttle was it or something else was going on, but the third time was a charm. After a successful start, I brought the engine to idle stop and noted the idle speed was at the bottom of the limit range. All other indications were normal, and we pressed.

After starting the left engine and going through all of our post start checks, hydraulic fluid began to leak from the right engine. We shut down both engines to fix the leak. Our maintenance did not have the replacement part, and they had to hunt all over the base to find one. As we watched our takeoff time come and go, maintenance found the part, and we were back in business.

We got the engine started, using the quarter-inch advance on the right throttle (I didn't want to give up a good thing), only to find another hydraulic leak. Again, we shut down. A base-wide search found the proper part, and we started up for the third time. By now, we were well into the afternoon. While we quickly went through the post-start checks, the backseaters called metro and got an update to our dash 1. Our clearance still was open, and we were ready to roll.

I think maintenance was just as glad as we were when we finally taxied out of the line. As we approached the holdshort, I reached down to turn on my O2, only to find the cockpit had become quiet. Realizing my O2 hose was disconnected, I made a few half-hearted attempts

Say When

Photo by Paul Farley

to reattach it. Giving up for the safer solution, I stopped the jet, set the parking brake, and reattached the hose.

When I regained ICS, I heard tower ask if we needed assistance. ECMO 1 replied, "No," and we were on our way. Tower came back and said it appeared we had leaked a bunch of fluid when we stopped. I made a U-turn on the taxiway and headed back to the line to get it checked. As we approached our puddle, I saw a fuel cap in the middle of it, which explained the puddle.

When we stopped in front of the puddle, we spilled more fuel. Tower had us hold position while they sent a truck to assist. It must have been a slow day because three fire trucks showed up. One of the intrepid firemen approached the jet, looked underneath, and reported our centerline fuel cap was missing. I signaled I knew that because the cap was about 10 feet from his feet. He finally saw it and signaled back, "Hey, here it is."

He picked up the cap, ran underneath the jet, put it on, and called tower. Tower said we were good to go. We replied, "Thanks, but our maintainers are on their way, and we would like them to look at it." Our maintainers found nothing wrong, except the cap was on backward. At last, we were good to go.

We got our taxi clearance to the runway. I brought up power to get us moving, brought it back to idle to make the U-turn, and then the right engine flamed out.

"Okay we're done," I announced.

We taxied back to the line and shut down. The SDO, desperate to make a sortie, asked if we were going to try again. "No thanks," was our polite reply.

When would you have called it quits? When an engine that was flaming out inexplicably on start finally kept running? After a recurring hydraulic problem? After three man-ups and a puddle of JP-5?

I must have bounced the throttle off the idle stop a dozen or so times before the engine finally quit that last time. Without the multiple other problems, it likely would have failed in the air. We definitely had some get-there-itis, and we all want to believe the maintainers when they say the aircraft is good to go, but, in this case, we were fortunate the engine flamed out on deck.

LCdr. Byers flies with VAQ-140.

Watch Your Head!

By Ltjg. Joseph E. Parker

Sometimes it's OK to tell on yourself. I was in the port helo hangar doing a pilot weekly inspection. One of the inspections required removal of the tail-rotor, drive-shaft cowlings. I completed all the items for the tail rotors I could and asked one of the maintainers to remove the cowlings. After completing some maintenance paperwork, I continued my inspections.

The ship was engaged in DIVTACS in a moderate sea state, and we were experiencing some pitch and roll but nothing out of the ordinary.

While perched atop the tail pylon, on greasy steps, with flashlight, pen, and clipboard in hand, I heard the hangar door open. "Oh shoot," I thought; that may be the maintenance chief. I had forgotten to put on a cranial before climbing 10 feet up the tail. Not wanting to incur the wrath of our maintenance chief, I scampered down the tail, nonchalantly strolled past the chief, and looked for the proper PPE.

There was no harm, no foul. However, in retrospect, I narrowly avoided a couple of hazards. First, though I did don a cranial my first trip up the tail, I had enough on my mind to distract me from wearing it on the second trip. Do not let multi-tasking cloud your situational awareness.

Second, after you've been out to sea for a couple of months and daily tasks become easier, do not let complacency take over. Even though you have a little experience, no aviator is absolved from the responsibility of ensuring a safe working environment—for himself and every shipmate.

Third, scampering down the tail was not my smartest course of action. Do not let fear of error or retribution propel you into a medical appointment or a dangerous situation. We were fortunate to have a maintenance chief who promotes safety enough for us to check ourselves at the very thought of his presence.

Ltjg. Parker flies with HSL-42.

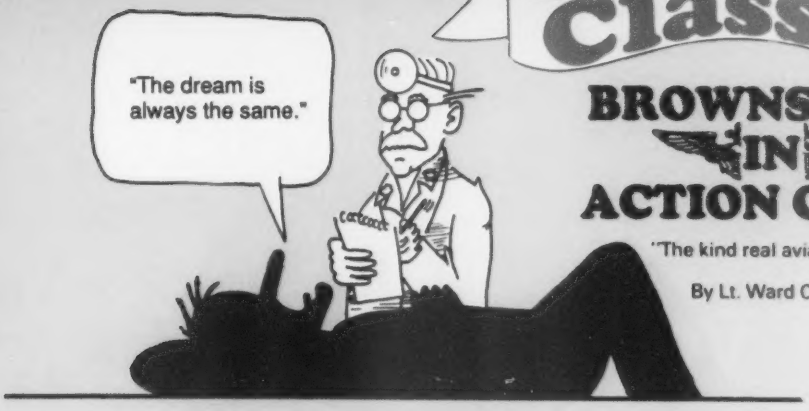
Photo by PHAN Jessica Davis

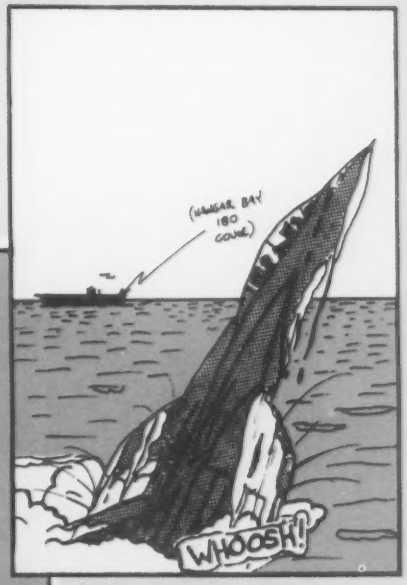
Classic

BROWNSHOES IN ACTION COMIX

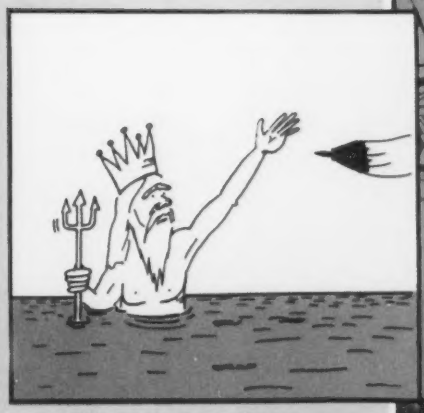
"The kind real aviators like"

By Lt. Ward Carroll

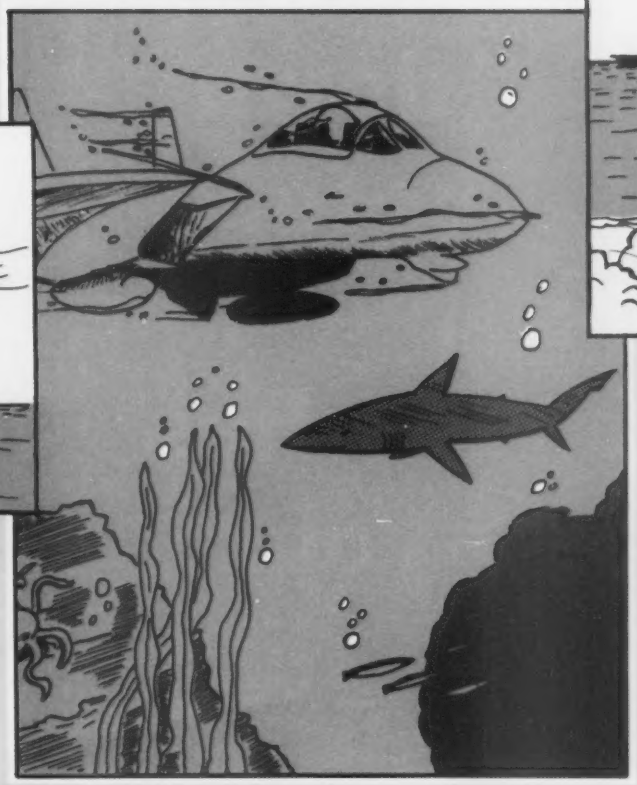




"At recovery time, I break through the surface at the 180 and fly a perfect pass to an OK-3 wire."



"Off the cat, I see King Neptune beckoning to me on the horizon. I fly into his gentle grasp and sink beneath the surface . . ."



"I spend the entire cycle underwater, at peace with the creatures of the deep . . ."

Ready Room Gouge

"The helicopter is probably the most versatile instrument ever invented by man. It approaches closer than any other to fulfillment of mankind's ancient dreams of the flying horse and the magic carpet."

—Igor Ivanovitch Sikorsky, comment on 20th anniversary of the helicopter's first flight Sept. 13, 1959

Photo by Sgt. Brian J. Griffin
Photo modified

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